

## **MapCoast Subaqueous Soil and Sediment User Conference – Report**

### **Background:**

A partnership, called MapCoast ([www.mapcoast.org](http://www.mapcoast.org)) has been formed to bring together groups and individuals with common interests in developing an inventory of coastal and subaqueous soil and sediment resources. On April 30<sup>th</sup>, 2004 a user conference was conducted to inform the coastal community of this partnership and to obtain information about the type of data the community would like to have. Approximately 70 people attended the conference representing a wide array of expertise and knowledge of coastal issues (see appendix 1 for a list of groups that attended). Through the use of brain-storming techniques and break-out groups, a large list of data and product needs was collected. The break out groups focused on four main questions; what kind of information you currently use, what kind of information do you need, what products you use, and what kind of products do you need? An exit questionnaire was also provided to each attendee asking about their interests in MapCoast, if they have expertise in certain areas, and if they would like to contribute data, equipment, or other resources to the partnership (appendix 2 has the questionnaire summary).

This document is a summary of the input obtained from the user conference. The list of information generated from each of the 4 breakout groups was evaluated and grouped into several main categories. Additional information about each data category such as the priority (based on number of groups with the same data need), the uses, benefits, and interpretations, and the MapCoast response about the category have been added.

## Types of Information Needed

<b>Data Category</b>	<b>Information Needed</b>	<b>Priority</b>	<b>Uses/Benefits/Interps</b>	<b>MapCoast Response</b>	<b>Status</b>
<b>Elevation (topography and Bathymetry)</b>	Detailed bathymetry – 2 foot contours minimum.	Highest priority – bathymetry was mentioned in all 4 groups.	<p>Needed for dredging information – show recent dredged areas (archaeological uses).</p> <p>Need for a high – resolution digital terrain model including bathymetry.</p> <p>Emergency planning applications – sea-level rise, FEMA, etc.</p> <p>Drowned village locations.</p>	<p>Need to form a subcommittee to work on this need.</p> <p>Currently working to obtain Lidar elevation for RI.</p>	A subcommittee is being formed as of June 10, 2004. A meeting is scheduled for June
	Tidal Data – MHW, MLW		Beach access, regulatory applications (property lines).	Tide data is available from NOAA.	
<b>Data Category</b>	<b>Information Needed</b>	<b>Priority</b>	<b>Uses/Benefits/Interps</b>	<b>MapCoast Response</b>	<b>Status</b>
<b>Soil and Sediment Data</b>	Classification and distribution of subaqueous soils.			NRCS is seeking funding to open a subaqueous soil survey office for the NE Region.	Planning on completing the subaqueous mapping in Ninigret Pond this summer.
	Interpretations of classified soils.				
	Soil permeability for septic systems/risk assessment; include slopes, near shore soils, upland soils.		Environmental interpretations, health and water quality benefits.	Updated coastal soils will provide interpretations for septic systems. Drainage classes	

				will be mapped for coastal soils.	
	Re-mapping of old soil survey.			Coastal soil areas will be updated and joined into existing survey.  The published soil survey of RI will be evaluated to determine if updating is needed.	
	Mapping of filled areas and structures.			Anthropogenic soils will be mapped and classified in coastal and subaqueous areas.	
	Coastal erosion hazards – changing coastline.		Accretion rates and relation to sea level rise.		
	Using bed configuration to assess current flow information.				
	Extending the depth of mapping beyond 2.5 m.	High – most groups wanted deeper info.	More info on other habitats – clams, oysters, lobsters, flounders.	The subaqueous soil mapping is limited to approximately 2.5 m. Sediment mapping for deeper areas.	MapCoast has extended this to 5 meters.
<b>Data Category</b>	<b>Information Needed</b>	<b>Priority</b>	<b>Uses/Benefits/Interps</b>	<b>MapCoast Response</b>	<b>Status</b>
<b>GIS/Cartography Remote sensing</b>	Rectified historic imagery available for download		Land use changes, show location of former wetlands and drainage.	JDT comment – RI NRCS is working on registering the	

				1939 aerials on an as-needed basis.	
	Ortho images flow every 2-3 years	High			
	Map resolution as high as possible (.25 acre should be minimum).			Soil survey is limited to the scale of publication but detailed (order 1 surveys) can be made for study or high priority sites.	
	Map of Eelgrass in bay.	High		JDT – Isn't this already mapped?	
	Data sharing – better communication among players.			This is a goal of MapCoast.	
	Archived photos and data.				
	Thermal imagery.		Fresh water movement into estuary.		
	Depth to bedrock.		Engineering structures, pylon and bulkhead construction.  Rock outcrops may be locations of former villages.		
	Side-scan sonar and bottom analysis.		Location of shipwrecks.		
	Map of coastal vegetation.		Coastal permitting issues and beach access.		
	More accurate mapping of hardened shorelines.		Regulatory uses, habitat evaluation, erosion hazards.	This will be mapped in the soil survey as special features.	Underway – cooperative project between URI (Geosciences) and CRMC. South shore almost done.

<b>Data Category</b>	<b>Information Needed</b>	<b>Priority</b>	<b>Uses/Benefits/Interps</b>	<b>MapCoast Response</b>	<b>Status</b>
<b>Chemical and Physical Properties</b>	Water clarity, temperature, and nutrients.				
	Chemical and physical analysis of soil/sediment.		Grain size distribution, sulfides, salinity throughout cores.  Potential turbidity of dredged sediments.		
	Oxic/Anoxic layer – where does it occur?				
	Fresh water movement into estuary.				
	Soil bio-chemistry and salinity of cores.		Salinity drives habitat types.		
	Metals in sediment and bio-availability.		Health issues, locating toxins.		
<b>Data Category</b>	<b>Information Needed</b>	<b>Priority</b>	<b>Uses/Benefits/Interps</b>	<b>MapCoast Response</b>	<b>Status</b>
<b>Ecological</b>	Prime natural resource bases 15,000 YBP to present.				
	Map of Eelgrass in bay.	High			
	Correlation between habitat, sediment, and organisms.				
	Benthic communities and the type of bottom they live in/on.				
	Habitat restoration, site selection and suitability.				
	TMDL – bacteria relations to soil/sediment.				

<b>Data Category</b>	<b>Information Needed</b>	<b>Priority</b>	<b>Uses/Benefits/Interps</b>	<b>MapCoast Response</b>	<b>Status</b>
<b>Regulatory</b>	Cumulative impacts of docks and moorings.		Relation to Eelgrass growth.		
	Attribute table of structure permits.				

### Products Needed from User Conference Break-Out Groups

<b>Product Category</b>	<b>Product Needed</b>	<b>Priority</b>	<b>Uses/Benefits/Interps</b>	<b>MapCoast Response</b>	<b>Status</b>
<b>Technology</b>	Computers and plotters; software; hardware; training				
	Video stitching software to incorporate this video data into GIS software.				
	Interactive website with attribute data.		Able to specify area of interest, 3-D database.  Data storehouse, gateway, security clearance/password for full access maybe; view data only		
	Geo-referenced video-Visual Data collection techniques.				
<b>Publications</b>	Reports and hard copy format.				
	Large scale maps, paper copies.				
	Digital base map.				
	Map Scale		1:12,000 with 2 acre delineation, priority areas in detail.		

			<p>Maintain highest resolution at raw data level if possible.</p> <p>Have a Standard Scale and a Priority Scale.</p> <p>We should take a opportunistic approach in identifying priority areas for finer resolution such as G-Bay and SAMP plans Providence River, Quonset etc.</p>		
	Need to map all salt ponds and associated watersheds.		Hi value ecosystems both economic and ecological value.		
<b>Data</b>	Bottom imagery.		<p>Very useful for many aspects, management, science, habitat restoration, public outreach.</p> <p>Good for aquaculture to show site applicants suitability of the bottom</p>		
	Vector Data		Raw uninterrupted data.		
	Depth of Data Collection		<p>Go to five seven meters depth &amp; look at marine coordinates to add to database- look at other deeper water habitats of need. (photic zone).</p> <p>Soil/Sediment data to at least 10 meters.</p>		
	Mapping of intertidal zone.				
	Soil nomenclature understandable and common to all disciplines.		Have mapping convention for taxonomy that will be correlated with the 4 system with other systems to show relationship-will help bring related disciplines together to be able		

			to share info/interp.		
	Microbial data.				
	Exotic data.		Invasive -flora and fauna relationships with sediment and soil.		
	Relationship between shellfish production and recruitment and sediment and soil interactions.				
	Historic trends.		Nutrient conditions over time.		
	Shoreline change over time.				
	Vegetative map correlated with soils.				
	Organic Carbon data.		Nutrient sinks, global warming studies.		
<b>Other</b>	Ensure process is also seamless at the Agency level.				
	Need information that can be used to change land use ordinance at the local level.				



**Appendix A: List of groups in attendance of User Conference:**

Below is a breakdown of the categories and affiliation of the people who attended the user conference. The audience represented a wide array of interests and expertise working in the coastal areas and as data consumers. A list of the kinds of information and types of products the audience use is also provided below.

<b>Category</b>	<b>Affiliation</b>	<b>Numbers</b>
<b>Academia</b>	URI	11
	RWU	1
	Brown	1
<b>Federal</b>	NPS	4
	EPA	8
	NRCS	12
	USGS	2
	USACOE	2
	NOAA	1
<b>State</b>	CRMC	12
	RIDOT	1
	RIDEM	4
	RIEMA	1
	Historical Preservation	2
<b>Town</b>	South Kingston	1
	Westerly	2
	North Kingston	1
<b>Nonprofit</b>	Save the Bay	2
	Salt Ponds Coalition	1
<b>Private</b>	ESS Group	1
	PAL	1
<b>Political</b>	Chafee	1

**List of the kinds of information the participants use:**

Bathymetry, elevation (topography), and ortho imagery were identified as a major data set in all groups. GIS data such as soil survey, wetlands, Eelgrass maps, transportations, land use, and habitat maps were also identified. Paper maps and electronic mapping was used by most of the participants.

**The products the participants listed that they use include;**

RIGIS data, online mapping (IMS), hard paper copies of maps (soil survey, USGS mapping), and aerial imagery topped the list. Other products included side scan sonar maps and other software products.

**Appendix 2: Summary of interests, expertise, data, and equipment the participants provided in the questionnaire:**

<b>Interests</b>	<b>Expertise</b>	<b>Data</b>	<b>Equipment</b>
Salt Ponds (3)	Shallow coastal systems	Known archaeological sites.	Financial resources.
Regulatory, pollutant, nutrients, and biologic effects.	Sediment and habitat mapping.	Grain size, TOC, sediment chemistry, and sediment biology.	Geophysical, side scan sonar, bathymetric, and sampling tools.
Public outreach and education.	Submerged archaeological sites.	Municipal data.	Divers, boats and students.
Eelgrass beds.	Fin and shellfish habitat.	GIS parcel data.	Augers, mapping tools.
Marine geology.	Coastal processes.	Salt pond data.	Boats, ground truthing
Sea floor mapping.	Sediment chemistry.		Sea floor mapping, coring and porewater gear.
Estuarine sediments.	Benthic invertebrates.		Submarine ground water imaging tools.
Coastal wetlands.	Narragansett Bay and coastal pond knowledge.		Ground penetrating radar.
Fisheries, shellfish, habitat issues.	Coastal groundwater, sediment biogeochemistry, coastal geology, sea level rise.		Volunteers.
Habitat mapping.	Ground truthing data.		Analytical facilities.
	Soil Survey.		
	Bathymetric survey, dredge operations.		Underwater video cameras, GIS stamp.